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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,069	05/01/2007	Werner Brandstatter	NOS-111	9981
76444	7590	04/24/2009	EXAMINER	
Setter Roche LLP			JENNINGS, STEPHANIE M	
P.O. Box 780			ART UNIT	
Erie, CO 80516			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,069	BRANDSTATTER ET AL.	
	Examiner	Art Unit	
	Stephanie Jennings	3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 29-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060612</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Claims 29-43 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 5, 2009.
2. Applicant's election without traverse of claims 1-28 in the reply filed on March 5, 2009 is acknowledged.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
4. The abstract of the disclosure is objected to because it is longer than 150 words and is more than one paragraph. Correction is required. See MPEP § 608.01(b).
5. The disclosure is objected to because of the following informalities: specific references to the claims and inclusion of embodiments "not in accordance with the invention" sections in the specification.

Appropriate correction is required.

Claim Objections

6. Claim 14 is objected to because of the following informalities: misspelling of "element(s)". Appropriate correction is required.

Drawings

7. The drawings are objected to because there are no numeric labels on figures, German labels on figures, handwriting on Figure 10, and unclear photographs. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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9. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is meant by "a large volume of water" or "very low pressure."

10. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is encompassed by at "substantially zinc" mixture.

11. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is meant by "other suitable coating processes" as this could encompass a broad range of coating processes.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

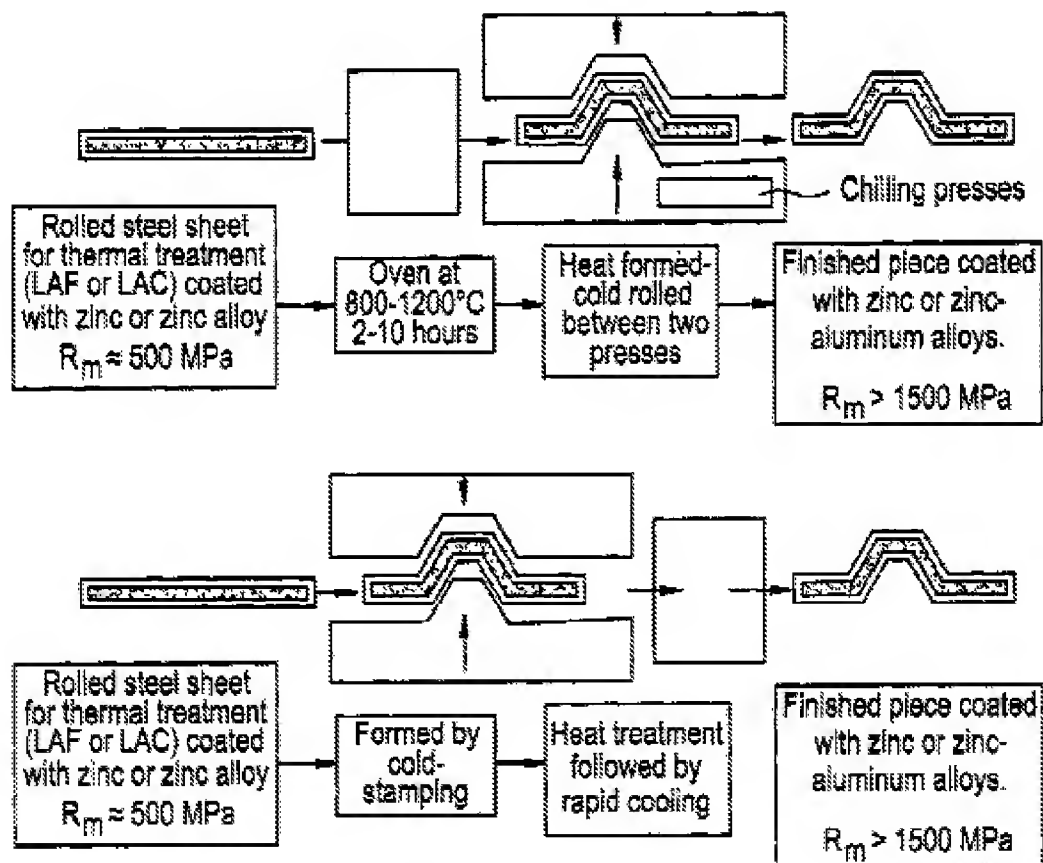
13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-5, 8-15, 18-19, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kefferstein US Patent No. 6,564,604.

15. Kefferstein teaches:



16. Limitations from claim 1, a method for producing a hardened profiled structural part from a hardenable steel alloy with cathodic corrosion protection, comprising: applying a coating to a sheet made of a hardenable steel alloy (column 1, lines 59-63), wherein the coating comprises zinc (column 2, lines 15-17), and the coating further comprises one or several elements with

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affinity to oxygen in a total amount of 0.1 weight-% to 15 weight-% in relation to the total coating; subsequently roller-profiling the coated sheet steel in a profiling device, so that the sheet tape is formed into a roller-formed profiled strand; thereafter heating the coated sheet steel, at least in part and with the admission of atmospheric oxygen, to a temperature required for hardening, and heating the coated sheet steel to a structural change required for hardening (column 1, lines 56-57); wherein a skin made of an oxide of the element(s) with affinity to oxygen is formed on the surface of the coating (column 2, lines 15-19); and after sufficient heating, cooling the sheet, wherein the rate of cooling is set in such a way that hardening of the sheet alloy is achieved (column 2, lines 8-11).

17. Kefferstein does not explicitly disclose a zinc oxide compound, however it is well-known in the art that zinc easily forms compounds with oxygen and zinc oxide are commonly used as metal coatings.

18. Limitations from claim 2, the method in accordance with claim 1, comprising welding the profiled strand, which was profiled in a profiling installation, in a downstream-located welding device (column 1, lines 56-57).

19. Limitations from claim 3, the method in accordance with claim 1, comprising cutting the profiled strand into profiled strand sections prior to heating the profiled strand to the temperature required for hardening (column 1, lines 56-57).

20. Limitations from claim 4, the method in accordance with claim 3, comprising heating the profiled strand or the profiled strand sections, prior to being heated to the temperature required for hardening, in a heating step to a temperature that makes possible the partial formation of

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iron-zinc phases in the coating, and maintaining the profiled strand or the profiled strand sections at this temperature (column 2, lines 15-19).

21. Limitations from claim 5, the method in accordance with claim 3, comprising providing holes, cutouts, punched-out places and/or a required perforation pattern in the profiled strand or the profiled strands sections, prior to or following profiling and/or prior to or following the cutting to size, and prior to heating to the temperature required for hardening (column 1, lines 56-57 and 64-65).

22. Limitations from claim 8, the method in accordance with claim 1, comprising heating the profiled strand and/or the profiled strand sections inductively and/or by convection and/or by radiation (column 2, lines 1-2).

23. Kefferstein does not explicitly disclose a heating method; however, a rise in temperature of the metal part would have to result from some method or combination of inductive, convective, or radiative heat transfer.

24. Limitations from claim 9, the method in accordance with claim 1, comprising cooling the sheet in water, wherein a large volume of water is conducted at a very low pressure to the structural component to be hardened (column 2, lines 8-10).

25. Kefferstein does not disclose cooling the sheet in water, but specification does not detail the criticality of cooling the sheet with water in the specification.

26. Limitations from claim 10, the method in accordance with claim 1, wherein magnesium and/or silicon and/or titanium and/or calcium and/or aluminum and/or manganese and/or boron are used in the mixture as elements with affinity to oxygen (column 2, lines 15-19).

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27. Limitations from claim 11, the method in accordance with claim 1, comprising applying the coating using a hot-dip galvanization process, in which a mixture of substantially zinc with the element(s) with affinity to oxygen is used (column 2, lines 15-19).

28. Limitations from claim 18, the method in accordance with claim 1, wherein aluminum is substantially employed as the element with affinity to oxygen (column 2, lines 18-19).

29. Limitations from claim 19, the method in accordance with claim 1, wherein the coating mixture is selected in such a way that in the course of heating the layer forms a surface oxide skin made of oxides of the elements with affinity to oxygen and the coating forms at least two phases, wherein a zinc-rich phase and an iron-rich phase are formed (column 2, lines 15-19).

30. Limitations from claim 26, the method in accordance with claim 1, comprising inductively heating the sheet (column 2, lines 1-2).

31. Limitations from claim 27, the method in accordance with claim 1, comprising heating the sheet in a radiation furnace (column 2, lines 1-2).

32. Kefferstein does not explicitly disclose a heating method; however, a rise in temperature of the metal part would have to result from some method or combination of inductive, convective, or radiative heat transfer.

33. Limitations from claim 28, The method in accordance with claim 1, comprising forming and hardening the structural component in a roller forming installation, wherein the coated sheet is heated, at least in parts, to the austenizing temperature, is subsequently roller-formed prior to, during and/or after this and, following the roller forming, is cooled at a rate of cooling which causes hardening of the sheet alloy (column 1, line 56-column 2, line 25).

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34. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kefferstein as applied to claim 1 above, and further in view of Imai et al. WIPO Publication No. WO 03/0335922.

35. An English translation of Imai is not immediately available, so the Imai et al. European Patent No. 1,439,240 A1 will be relied upon in this office action for citations.

36. Kefferstein teaches a method for applying a coating to a hardened profile part, but does not teach such a method with the coating applied via electrolysis. Imai, however, does teach this method.

37. Imai teaches:

38. Limitations from claim 6, the method in accordance with claim 1, comprising heating the profiled strand or the profiled strand sections to a temperature of 850°C to 950°C. at a heating rate of 50°C to 100°C per second, and maintaining the profiled strand or the profiled strand sections at this temperature for at least 5 seconds, and cooling the profiled strand or the profiled strand sections at a cooling rate of 25°C to 45°C per second (paragraph 18).

39. Limitations from claim 7, the method in accordance with claim 1, comprising, in the course of heating, maintaining the profiled strand or the profiled strand sections at 500°C to 600°C for at least 10 seconds, and subsequently further heating the profiled strand or the profiled strand sections (paragraph 18).

40. Imai discloses the claimed invention except for the temperature ranges and rates. It would have been obvious to one having ordinary skill in the art at the time the invention was made to experiment to find these optimal heating ranges, since it has been held that where the

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general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

41. Limitations from claim 12, the method in accordance with claim 1, comprising applying the coating electrolytically (abstract).

42. Limitations from claim 13, the method in accordance with claim 12, wherein in the course of the electrolytic coating first a zinc layer is deposited, and thereafter the element(s) with affinity to oxygen is (are) deposited on the applied zinc coating in a second step (abstract).

43. Limitations from claim 14, the method in accordance with claim 12, comprising initially electrolytically depositing a zinc coating on the surface of the sheet, and subsequently applying a coating of the elements(s) with affinity to oxygen to the zinc surface (paragraph 22).

44. Limitations from claim 15, the method in accordance with claim 14, comprising applying the element(s) with affinity to oxygen by vapor deposition or other suitable coating processes (paragraph 24).

45. Limitations from claim 16, the method in accordance with claim 1, wherein 0.2 weight-% to 5 weight-% of the elements with affinity to oxygen are used (paragraphs 34-39).

46. Limitations from claim 17, the method in accordance with claim 1, wherein 0.26 weight-% to 2.5 weight-% of the elements with affinity to oxygen are used (paragraphs 34-39).

47. Limitations from claim 20, the method in accordance with claim 19, wherein the iron-rich phase is embodied to have a ratio of zinc to iron of at most 0.95 ($\text{Zn/Fe} \leq 0.95$), and the zinc-rich phase a ratio of zinc to iron of at least 2.0 ($\text{Zn/Fe} \geq 2.0$) (paragraphs 46-55).

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48. Limitations from claim 21, the method in accordance with claim 19, wherein the iron-rich phase has a ratio of zinc to iron of approximately 30:70, and the zinc-rich face is embodied with a ratio of zinc to iron of approximately 80:20 (paragraphs 46-55).

49. Limitations from claim 22, the method in accordance with claim 19, wherein the layer contains individual areas with zinc proportions >90% zinc (paragraphs 46-55).

50. Limitations from claim 23, the method in accordance with claim 1, wherein the coating is formed in such a way that, at a thickness of 15 μm , it develops a cathodic protection effect of at least 4 J/cm² after heating (paragraphs 77-78).

51. Limitations from claim 24, the method in accordance with claim 1, comprising coating the sheet with the mixture of zinc and the element(s) with affinity to oxygen during passage of the sheet through a liquid metal bath at a temperature of 425°C to 690°C and subsequently cooling the coated sheet (figure 1).

52. Limitations from claim 25, the method in accordance with claim 1, comprising coating the sheet with the mixture of zinc and the element(s) with affinity to oxygen during passage of the sheet through a liquid metal bath at a temperature of 440°C to 495°C and subsequently cooling the coated sheet (figure 1).

53. Imai discloses the claimed invention except for the temperature ranges and rates. It would have been obvious to one having ordinary skill in the art at the time the invention was made to experiment to find these optimal heating ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

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54. It would have been obvious to one of ordinary skill in the art to combine Imai's and Kefferstein's inventions because electrolysis is a well-known metallic coating application method in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephanie Jennings whose telephone number is (571) 270-7392. The examiner can normally be reached on Monday-Thursday, 7 am - 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on (571) 272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. J./
Examiner, Art Unit 3725
April 23, 2009

/Dana Ross/
Supervisory Patent Examiner, Art Unit
3725